Title (en)

BIOENGINEERED HUMAN BLOOD CELLS

Title (de)

BIOTECHNISCH VERÄNDERTE MENSCHLICHE BLUTZELLEN

Title (fr)

GLOBULES SANGUINS HUMAINS PRODUITS PAR GENIE GENETIQUE

Publication

EP 0795007 A4 20000405 (EN)

Application

EP 95901687 A 19941104

Priority

- US 9411810 W 19941104
- US 15238993 A 19931116

Abstract (en)

[origin: US5811301A] In vitro production of clinically useful quantities of single species of mature, differentiated human blood cells is carried out by a method in which human pluripotent hematopoietic stem cells, preferably from a universal donor, are incubated in a bioreactor in a growth medium also containing specific combinations of recombinant human growth and maturation promoting polypeptide factors that expand stem cell cultures and promote the maturation and differentiation of stem cells into single species of erythroid, thrombocytic or granulocytic human blood cells, and harvesting the mature cells. The growth and maturation promoting polypeptides employed include SCGF, Interleukins 1,3,4,5,6, and 11, GM-CSF, M-CSF, G-CSF and EPO. Stem cells may be preliminarily genetically modified so as to remove histocompatibility or blood group antigens with which a recipient may be incompatible, or the stem cells may be genetically altered by transfection with appropriate DNA-containing vectors, prior to addition to the bioreactor. Erythrocytes prepared in large quantities by this method are also a good source of iron, in the form of iron-saturated hemoglobin, for use in iron replacement therapy.

IPC 1-7

C12N 5/00; C12N 5/02; C12N 5/06; A61K 35/14; A61K 35/18; C12N 5/10; A61K 38/42

IPC 8 full level

A61K 38/42 (2006.01); **C12N 5/078** (2010.01); **C12N 5/0787** (2010.01); A61K 48/00 (2006.01)

CPC (source: EP US)

A61K 38/42 (2013.01 - EP US); **C12N 5/0641** (2013.01 - EP US); **C12N 5/0642** (2013.01 - EP US); **C12N 5/0644** (2013.01 - EP US); A61K 48/00 (2013.01 - EP US); C12N 2500/24 (2013.01 - EP US); C12N 2500/36 (2013.01 - EP US); C12N 2500/90 (2013.01 - EP US); C12N 2501/125 (2013.01 - EP US); C12N 2501/14 (2013.01 - EP US); C12N 2501/22 (2013.01 - EP US); C12N 2501/23 (2013.01 - EP US); C12N 2501/33 (2013.01 - EP US); C12N 2501/39 (2013.01 - EP US); C12N 2510/00 (2013.01 - EP US)

Citation (search report)

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- [Y] WO 9302182 A1 19930204 - EDISON ANIMAL BIOTECH CENTER [US]
- [Y] KOLLER, M.R. ET AL.: "Large-scale expansion of human stem and progenitor cells from bone marrow mononuclear cells in contiuous perfusion cultures", BLOOD, vol. 82, no. 2, July 1993 (1993-07-01), pages 378 - 384, XP002105657
- See references of WO 9514078A1

Designated contracting state (EPC)

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DOCDB simple family (publication)

US 5811301 A 19980922; AU 1082895 A 19950606; AU 697175 B2 19981001; CA 2184485 A1 19950526; EP 0795007 A1 19970917; EP 0795007 A4 20000405; US 5599705 A 19970204; WO 9514078 A1 19950526

DOCDB simple family (application)

US 69447896 A 19960807; AU 1082895 A 19941104; CA 2184485 A 19941104; EP 95901687 A 19941104; US 15238993 A 19931116; US 9411810 W 19941104